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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

07-SED-0403

OCT 05 2007

Mr. John P. Martell, Manager
Radioactive Air Emissions Section
State of Washington
Department of Health
Office of Radiation Protection
Post Office Box 47827
Olympia, Washington 98504-7827

Dear Mr. Martell:

TRANSMITTAL OF REVISION 1A, RADIOACTIVE AIR EMISSIONS NOTICE OF
CONSTRUCTION FOR TRANSITION OF THE PLUTONIUM FINISHING PLANT,
DOE/RL-2003-43

0069243

Enclosed is a copy of the subject Notice of Construction (NOC) application revision form.

This NOC application revision is being submitted to the State of Washington, Department of
Health, Division of Radiation Protection, for approval pursuant to Washington Administrative
Code 246-247-060. If you have any questions, please contact me, or your staff may contact
Rob G. Hastings, Acting Assistant Manager for Safety and Engineering, on (509) 376-9824.

Sincerely,

David A. Brockman
Manager

SED:DEJ

Enclosure

cc w/encl:

J. A. Bates, FHI
R. W. Bloom, FHI
B. J. Dixon, FHI
S. Harris, CTUIR
M. J. Jansky, FHI
R. Jim, YN
J. L. Nuzum, FHI
P. Sobotta, NPT
D. Zhen, EPA
Administrative Record T-2-9
Environmental Portal, LMSI

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EDMC

Enclosure

NOC APPLICATION REVISION
RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION FOR TRANSITION OF
THE PLUTONIUM FINISHING PLANT, DOE/RL-2003-43, Rev. 1A

NOC Application/Permit Revision/AOP Off-Permit Change Notification

NOTE: Any increase to abated or unabated PTE requires a full NOC modification

REASON FOR CHANGE

Submittal Date:

Submittal Type: Other Submittal

☒ **NOC Application Revision**

New NOC Rev Number: DOE/RL-2003-43, Rev. 1A

Request for revision of approval conditions

☐ **Condition Change/ Clarification**

WDOH Condition Number: _____

AOP Condition Number: _____

☐ **ALARACT Revision**

New ALARACT Rev Number: _____

PROJECT IDENTIFICATION

Project Title: Transition of the Plutonium Finishing Plant (PFP)

Current NOC Application Number: DOE/RL-2003-43, Rev. 1

AEI ID Number (AOP Emission Unit Number(s): 390

Current WDOH Approval Letter Number(s): AIR 06-1020

WDOH NOC ID Number: 655

DESCRIPTION OF CHANGE

Number of Attachments 1

WDOH will provide a new approval letter containing any new or modified conditions that result from the following proposed change.

Proposed Change (provide original and proposed wording):

The existing NOC application contains information regarding the number of stages of HEPA filters in place for the 296-Z-6 emission unit. For the 296-Z-6 emission unit there are two parallel banks of HEPA filters containing two stages of filters in series in each bank. One bank of HEPA filters is required to be operational. Abatement credit is given for only one HEPA filter in each bank. This revision reflects a change in the method for testing the filter stages in each filter bank. The intent is to both test and credit the two filters in each bank as a single filter. This change in methodology would allow for improved accuracy of the HEPA filter test results. Since this change only affects how the filters are tested and not their physical configuration, no changes in the documented (License FF-01) potential-to-emit (PTE) limit ($5.5E^{-2}$ mrem/year, Condition 7) or abated emission limit ($2.8E^{-5}$ mrem/year, Condition 7) for the 296-Z-6 emission unit are necessary. Also, actual emissions are not expected to change due to this change in testing methodology.

The current approved NOC application text:

As allowed in ASME/ANSI N510, certain sections of N510 can be used as technical guidance for non-N509 systems. To demonstrate the adequacy of the system design and operation, final stages of HEPA filters are aerosol tested individually in-place annually (at a minimum control efficiency of 99.95 percent) to meet the intent of ANSI N510. This annual testing includes a visual inspection of the housing as described in ANSI N510.

The proposed change would be to modify the text of the NOC permit application as indicated:

As allowed in ASME/ANSI N510, certain sections of N510 can be used as technical guidance for non-N509 systems. To demonstrate the adequacy of the system design and operation, both stages of HEPA filters are aerosol tested in-place annually as a single unit (at a maximum penetration of less than 0.05 percent for particles with a median diameter of 0.7 um) to meet the intent of ANSI N510. This annual testing includes a visual inspection of the housing as described in ANSI N510.

Justification for Requested Revisions:

The change does not represent any increase in the estimated PTE for the 296-Z-6 emission unit nor any reduction in credited abatement, but reflects a testing method change to assure more accurate results from aerosol testing.

Generally, for testing of such filter arrangements, a test section installed between filter stages is designed to provide sufficient mixing in the airstream to allow representative sampling of the aerosol concentration between the filter stages. This is not the case for the 2736-ZA filter banks. There is no test section installed between the two filter stages in either filter bank. While there are two sets of sample ports between the filter stages (two ports directly downstream of the first filter stage and two ports directly upstream of the second filter stage), there is no provision for mixing or representative sampling of the airstream between the filter stages. The lack of a test section between the two filter stages inhibits the ability to obtain a representative sample of the aerosol concentration in the airstream between the filter stages. Therefore, both filter stages in each filter bank will be tested and credited as a single filter, which will provide a more representative sample of the aerosol concentration both upstream and downstream.